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Richmond, Virginia

To: Dr. E. B. Sanders

Date: November 6, 1991

From: G. N. Yatrakis

Subject: 1991-1992 Operational Plans - Project ART

Attached are the revised Project ART Operational Plans for the 4th Quarter 1991 through 1992.

If I can be of further assistance in this matter, please feel free to contact me.

G. N. Yatrakis

GNY:lgk

Attachment

cc: S. Clark
R. Cox
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Source: https://www.industrydocuments.ucsf.edu/docs/lgkl0000

ART PROGRAM
1991-1992 OPERATIONAL PLAN - Revised
November 6, 1991

A. DE-NIC PROGRAM

I. Objective: **Develop a family of subjectively acceptable low tar, regular and menthol products from filler, which through supercritical CO_2 extraction, has a residual nicotine level of <0.1%.**

II. Strategies:

A. **Strategy I - Support the current test market in Phoenix.**

1. Provide subjective and analytical support for production of test market allocation.

   On-going

B. **Strategy II - Subjective Development/Incremental Change**

1. Flavor Technology work continues to evaluate new flavor systems which offer an improved subjective profile.

2. Evaluation of new and novel filter systems for an improved subjective profile is on-going.

   On-going

C. **Strategy III - Bermuda Hundred Production Facility Support**

Provide support on an as-needed or as-requested basis.

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D. **Strategy IV - Support of Low Tar/High Flavor Program**

Provide all necessary support for the Low Tar/High Flavor program.

As-needed

E. **Strategy V - Evaluate and develop process modifications for the utilization of ART process by-product tobaccos.**

Development of process modifications for use of post-ART stems continues. Testing in sheet materials involves substitutions for stem in RCB and RL's to determine acceptable levels. R&D has recommended that MPC stems be included in the RCB process at a 2% level replacing Burley stems (POL 3637). If implemented this would deplete the inventory in 10 months. Tests of CA stems in RCB replacing Burley stems are in progress. A recommendation was made to include DLF-3B into all expanded ET products at a rate of 4% before expansion. This was implemented at the MC and Cabarrus plants on August 5, 1991 and is expected to be complete during the 1st quarter of 1992.

Complete -- 4rd Qtr. 1991

B. HALF-NIC PROGRAM

I. Objective: **Through the use of PM proprietary technology (ART), develop families of products which deliver 50% of the nicotine of a conventional product at equal tar with comparable subjective response.**

II. Strategies:

A. **Strategy I - Tar/Nicotine Interaction Studies**

Three studies were initiated to determine subjectively the optimal nicotine delivery at a given tar level. In addition, a fourth study was expanded to include varying menthol deliveries in conjunction with varying tar and nicotine deliveries. All studies have been completed.

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B. Strategy II - Half-Nic Development

The following approach is being pursued.

1. **Extraction and Processing** -- To determine which method of extraction and processing yields the most subjectively acceptable cigarette with the highest impact the following models will be produced for subjective comparisons:

    a. Blending of unextracted and fully extracted fillers with 35% 215-ET.

    b. Partial extraction of blend with 35% 215-ET.

    c. Partial extraction of total blend with 35% ET produced by DIET.

    d. Partial extraction of total blend with 35% ET produced by NET.

2. **Filler Additives, pH Adjustments** -- The most subjectively acceptable prototype chosen above will be used for the evaluation of various filler additives. At the present time, we anticipate evaluating 3 different additives for their effect on impact: Ammonium bicarbonate, Magnesium oxide and Calcium hydroxide.

3. **Filter Development** -- Using the information learned above, we will produce a "base model" for evaluation of filters, filter additives and alternate plasticizers. Filter systems will be chosen based on increases in impact and/or positive movement in subjective attributes.

4. **Cigarette Papers** -- Using subjective evaluations as a determining factor, various cigarette papers will be evaluated for an increase in impact and/or positive movement in subjective attributes while still maintaining the design criteria.

5. **Casing/Aftercut Development** -- Laboratory development of flavor systems will be ongoing throughout the cycle of development described above. Final flavor systems will be geared toward accentuating strength, tobacco flavor and developing a balanced product.

Prototype Development	1st Qtr. 1992
Internal Testing	2nd Qtr. 1992

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C. RESOURCE ALLOCATION ART PROGRAM

Flavor Technology Division	2.25
Chemical Research Division	0.50
Biochemical Research Division	1.50
Analytical Research Division	1.00
Cigarette Testing	0.50
Physical Research Division	0.20
Tobacco Processing and Fabrication	2.50
Total	8.45

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